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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,117	10/21/2003	David J. Vachon	1695.003	5330

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HESLIN ROTHENBERG FARLEY & MESITI PC
5 COLUMBIA CIRCLE
ALBANY, NY 12203

EXAMINER

BROOKS, KRISTIE LATRICE

ART UNIT	PAPER NUMBER
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1609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/691,117

Applicant(s)

VACHON ET AL.

Examiner

Kristie L. Brooks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-17 and 25-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-17 and 25-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/21/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. Applicant's election without traverse of Group V, claims 15-17, in the reply filed on January 17, 2007 is acknowledged.
2. Claims 15-17 & 25-34 are pending. The elected claims 15-17, and the new amended claims 25-34 are presented for examination and the non-elected claims 1-14 & 18-24 have been cancelled.

Claim Objections

3. Claim 15 is objected to because of the following informalities: the use of commas. The commas should be deleted.

Appropriate correction is required.

4. Claims 16-17 and 25-34 are objected to because of the following informalities: Article "A" needs to be changed article --The--.

Appropriate correction is required.

5. Claim 17 is objected to because of the following informalities: The sulfonated styrene polymer is an ammonium salt. The typographical error of "is" is noted and should be corrected to --comprises--.

Appropriate correction is required.

6. Claim 26, 28 and 34 are objected to because of the following informalities:
awkward wording.

In claim 26, please insert --the group consisting of-- between "from" and "a garment".

In claim 26, replace "or" with --and--.

In claim 28, insert --the group consisting of-- between "from" and "ethylene".

In claim 34, insert --the group consisting of-- between "from" and "a foam".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16 and 17 both recite the limitation "polymer" in the second line of claim 16 and the first line of claim 17. The claim they depend from recites "copolymer" not "polymer". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 15-17, 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laboratoire de Recherches Physiques (GB 1,098,006) in view of Blaser et al. (US 2,764,576).

The claims are drawn to a method of controlling biological organisms on a porous surface comprising forming a coating comprising a salt of a sulfonated styrene copolymer, on the porous surface.

Laboratoire de Recherches Physiques teaches a sustained release pharmaceutical composition in the form of a coated pellet or tablet containing a pharmaceutically active ingredient, which can include antibiotics (i.e. oxytetracycline), sedative and vermifuges, wherein the coating layer comprises one or more areas

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impermeable by said fluids of the gastrointestinal tract and the pharmaceutically active ingredient and one or more areas provided by a dialysis membrane permeable by the fluids and the ingredient (see the entire article, especially page 1 lines 10-28; page 2 lines 17- 27 and 63-98). The dialysis membrane used to form the permeable areas of the coating include sulfonated polystyrenes (which are sulfonated styrene copolymers) (see the entire article, especially page 1 lines 30-43; page 2 lines 44-45).

Laboratoire de Recherches Physiques does not expressly teach a salt of a sulfonated polystyrene and converting the sulfonated styrene copolymer from the acid form to the salt form. However, Blaser et al. suggests that in preparation of sulfonated styrene polymers the acid form can be converted to the salt form by the addition of inorganic or organic bases.

Blaser et al. teaches the preparation of water-soluble sulfonated styrene polymers where the styrene polymers which may be used as starting material include both polystyrene itself and its copolymers, where polystyrene sulfonic acids may be neutralized by inorganic or organic bases e.g. NH_4OH , and the salts are soluble in water and useful as thickeners, stabilizers, additions to adhesives, etc. (see the entire article, especially column 1 lines 18-72; column 2 lines 1-13; and the examples).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to form a coating comprising a salt of a sulfonated styrene

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copolymer on a porous surface. One of ordinary skill in the art would have been motivated to do this because Laboratoire de Recherches Physiques teaches a permeable membrane coating formed from materials including a sulfonated polystyrene, and the incorporation of an antibiotics such as oxytetracycline. The conversion of the sulfonated polystyrenes from the acid form to the salt form is relatively standard and common and Blaser et al. suggests so by just adding organic or inorganic bases, including NH_4OH , to the polystyrene sulfonic acids to prepare water-soluble salts. Furthermore, Laboratoire de Recherches Physiques incorporates antibiotics, which includes tetracycline and the use of doxycycline would be considered to be a obvious variant of an antibiotic that can be used by the reference.

11. Claims 25-26 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laboratoire de Recherches (GB 1,098,006) in view of Blaser et al. (US 2,764,576) as applied to claims 15-17 and 31-32 above, further in view of McIntosh (US 4,996,052).

The claims are drawn to a method of controlling biological organisms on a porous surface, comprising forming a coating comprising a salt of a sulfonated styrene copolymer on the porous surface where the coating is disposed on the surface of a wound dressing.

Laboratoire de Recherches Physiques teaches a sustained release pharmaceutical composition in the form of a coated pellet or tablet containing a pharmaceutically active ingredient, which can include antibiotics (i.e. oxytetracycline), sedative and vermifuges, wherein the coating layer comprises one or more areas impermeable by said fluids of the gastrointestinal tract and the pharmaceutically active ingredient and one or more areas provided by a dialysis membrane permeable by the fluids and the ingredient (see the entire article, especially page 1 lines 10-28; page 2 lines 17- 27 and 63-98). The dialysis membrane used to form the permeable areas of the coating include sulfonated polystyrenes (see the entire article, especially page 1 lines 30-43; page 2 lines 44-45).

Blaser et al. teaches the preparation of water-soluble sulfonated styrene polymers where the styrene polymers which may be used as starting material include both polystyrene itself and its copolymers, where polystyrene sulfonic acids may be neutralized by inorganic or organic bases e.g. NH_4OH , and the salts are soluble in water and useful as thickeners, stabilizers, additions to adhesives, etc. (see the entire article, especially column 1 lines 18-72; column 2 lines 1-13; and the examples).

Laboratoire de Recherches Physiques and Blaser combined do not expressly teach a coating disposed on the surface of a wound dressing. However, McIntosh suggests microbiocidal compositions being applied topically or incorporated into plastics, surgical gauze, pads on wound dressings, clothing etc. (see the entire article,

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especially the abstract; column 7 lines 1-10; column 8 lines 1-33, lines 57-68; column 9 lines 1-66; column 10 lines 6-26).

McIntosh teaches a microbiocidal additive being applied topically or incorporated into plastics (including thermoplastic polymers such as polystyrene), natural and synthetic fibers (e.g. polystyrene fiber), woven and non-woven fabrics for products such as surgical gauze, pads on wound dressings, clothing, hospital clothing (see the entire article, especially the abstract; column 7 lines 1-10; column 8 lines 1-33, lines 57-68; column 9 lines 1-66; column 10 lines 6-26).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to dispose a coating comprising sulfonated styrene copolymer on the surface of a wound dressing. One of ordinary skill in the art would have been motivated to do this because Laboratoire de Recherches Physiques and Blaser combined suggest a coating formed from materials including a sulfonated polystyrene or a salt of a sulfonated polystyrene, and the incorporation of an antibiotics such as oxytetracycline. The use of polystyrenes or sulfonated polystyrenes in combination with antibiotics, antimicrobials, etc. is known in the art as suggested by Laboratoire de Recherches Physiques and Blaser and McIntosh further suggests the use of microbiocidals as additives to polystyrenes or being incorporated directly into the synthetic polystyrene fibers or woven or non-woven fabrics in the manufacturing process for products including the padding on wound dressings, surgical gauze, clothing

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and hospital clothing. Furthermore, the use of the sulfonated styrene polymer would be considered to be an obvious variant of styrene polymers since sulfonated styrene polymers are well known in the art and it is standard to expand or improve properties of a product by adding additional compounds, such as sulfonating styrene polymers, since compounds containing sulfur are known to be used in preservatives, fungicides, etc., because of its antimicrobial properties.

12. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laboratoire de Recherches Physiques (GB 1,098,006) in view of Blaser et al. (US 2,764,576) as applied to claims 15-17 and 31-32 above, further in view of Richmond (US 3,081,291).

The claims are drawn to a method of controlling biological organisms on a porous surface, comprising forming a coating comprising a salt of a sulfonated styrene copolymer on the porous surface where in the sulfonated styrene copolymer comprises residues from an olefin comonomer.

Laboratoire de Recherches Physiques teaches a sustained release pharmaceutical composition in the form of a coated pellet or tablet containing a pharmaceutically active ingredient, which can include antibiotics (i.e. oxytetracycline), sedative and vermifuges, wherein the coating layer comprises one or more areas impermeable by said fluids of the gastrointestinal tract and the pharmaceutically active ingredient and one or more areas provided by a dialysis membrane permeable by the

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fluids and the ingredient (see the entire article, especially page 1 lines 10-28; page 2 lines 17- 27 and 63-98). The dialysis membrane used to form the permeable areas of the coating include sulfonated polystyrenes (see the entire article, especially page 1 lines 30-43; page 2 lines 44-45).

Blaser et al. teaches the preparation of water-soluble sulfonated styrene polymers where the styrene polymers which may be used as starting material include both polystyrene itself and its copolymers, where polystyrene sulfonic acids may be neutralized by inorganic or organic bases e.g. NH_4OH , and the salts are soluble in water and useful as thickeners, stabilizers, additions to adhesives, etc. (see the entire article, especially column 1 lines 18-72; column 2 lines 1-13; and the examples).

Laboratoire de Recherches Physiques and Blaser et al. combined do not expressly teach the sulfonated styrene copolymer comprises residues from an olefin comonomer. However, Richmond et al. suggests polymerizing ethylene, and other gaseous olefins to solid polymers, such as sulfonated styrene polymers, in the presence of an organic heavy metal (see the entire article, especially column 1 lines 15-21, lines 58-65; column 2 lines 19-3).

Richmond et al. teaches polymerizing gaseous olefins, such as ethylene, to solid polymers, including thermoplastic polymers (e.g. sulfonated styrene polymers), in the presence of heavy metal compounds (see the entire article, especially column 1 lines 15-21, lines 58-65; column 2 lines 19-3).

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It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to have a sulfonated styrene copolymer comprising residues from an olefin comonomer. One of ordinary skill in the art would have been motivated to do this because Laboratoire de Recherches Physiques and Blaser et al. combined suggest a coating formed from materials including a sulfonated polystyrene or a salt of a sulfonated polystyrene. The process of making sulfonated styrene polymers is well known in the art as suggested by Laboratoire de Recherches Physiques and Blaser et al. and Richmond further suggests a process for polymerizing olefins to sulfonated styrene polymers, in the presence of heavy metal compounds. It is well known in the art to expand or improve properties of a product or the process by which the product is created, such as adding additional groups e.g. olefins being polymerized to sulfonated styrene polymers as suggested by Richmond.

13. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laboratoire de Recherches Physiques (GB 1,098,006) in view of Blaser et al. (US 2,764,576) as applied to claims 15-17 and 31-32 above, further in view of Svenningsen et al. (US 6,664,309).

The claims are drawn to a method of controlling biological organisms on a porous surface, comprising forming a coating comprising a salt of a sulfonated styrene copolymer on the porous surface where in the sulfonated styrene copolymer is a sulfonated styrene-ethylene-butylene-styrene triblock copolymer.

Laboratoire de Recherches Physiques teaches a sustained release pharmaceutical composition in the form of a coated pellet or tablet containing a pharmaceutically active ingredient, which can include antibiotics (i.e. oxytetracycline), sedative and vermifuges, wherein the coating layer comprises one or more areas impermeable by said fluids of the gastrointestinal tract and the pharmaceutically active ingredient and one or more areas provided by a dialysis membrane permeable by the fluids and the ingredient (see the entire article, especially page 1 lines 10-28; page 2 lines 17- 27 and 63-98). The dialysis membrane used to form the permeable areas of the coating include sulfonated polystyrenes (see the entire article, especially page 1 lines 30-43; page 2 lines 44-45).

Blaser et al. teaches the preparation of water-soluble sulfonated styrene polymers where the styrene polymers which may be used as starting material include both polystyrene itself and its copolymers, where polystyrene sulfonic acids may be neutralized by inorganic or organic bases e.g. NH_4OH , and the salts are soluble in water and useful as thickeners, stabilizers, additions to adhesives, etc. (see the entire article, especially column 1 lines 18-72; column 2 lines 1-13; and the examples).

Laboratoire de Recherches Physiques and Blaser et al. combined do not expressly teach the sulfonated styrene copolymer being a sulfonated styrene-ethylene-butylene-styrene triblock copolymer as expressed in the instant claims. However,

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Svenningsen et al. suggests hot melt adhesive compositions suitable for a variety of applications by blending various adhesive components with a bacteriostat (see the entire article, especially the abstract).

Svenningsen et al. teaches a hot melt adhesive composition containing a polymer, tackifying resin, a plasticizer, a wax, an antioxidant, and a bacteriostat (see the entire article, especially column 3 lines 22-47). The preferred thermoplastic polymers used include styrene-ethylene-butylene-styrene block copolymer (SEBS) (see the entire article, especially column 3 line 48-67; column 4 lines 1-40):

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the sulfonated styrene-ethylene-butylene-styrene triblock copolymer. One of ordinary skill in the art would have been motivated to do this because Laboratoire de Recherches Physiques and Blaser et al. combined suggest a coating formed from materials including a sulfonated polystyrene or a salt of a sulfonated polystyrene and the incorporation of an antibiotics such as oxytetracycline. The use of polystyrenes or sulfonated polystyrenes in combination with antibiotics, antimicrobials, etc. is known in the art as suggested by Laboratoire de Recherches Physiques and Blaser et al. and Svenningsen et al. further suggests a hot melt adhesive composition including styrene-ethylene-butylene-styrene block copolymer (SEBS) and a bacteriostat to inhibit the growth of various microorganisms. Furthermore, the use of the sulfonated styrene-ethylene-butylene-styrene block (SEBS) block copolymer would be

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considered to be an obvious variant to styrene polymers since styrene-ethylene-butylene-styrene block (SEBS) block copolymers are known in the art and it is standard to expand or improve properties of a product by adding additional compounds, such as sulfonating styrene-ethylene-butylene-styrene block (SEBS) block copolymers, since compounds containing sulfur are known to be used in preservatives, fungicides, etc., because of its antimicrobial properties.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976).

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

14. No claims are allowed.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie L. Brooks whose telephone number is (571) 272-9072. The examiner can normally be reached on M-F 8:00am-5:30pm Est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on (571) 272-1600. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


JANET L. ANDRES
SUPERVISORY PATENT EXAM